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## PALATINE RECESS OF MAXILLARY SINUS MASQUERADING AS RADIO- LUCENT LESION: CASE REPORT

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### ABSTRACT

In this report we briefly present a case of a 13-year-old boy referred to the department of orthodontics for evaluation of malocclusion. A maxillary occlusal radiograph showed a well-defined multilocular-appearing radiolucent lesion in the right hard palate. Subsequent cone beam CT examination revealed pneumatization of the right maxillary sinus into the palatine process of maxilla. This anatomic variation has been sparsely reported in literature and dental practitioners should be aware of such a condition as it could be easily mistaken for pathology.

### معلومات المقال

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### الملخص العربي

**تمدد الجيب الفك في سقف الفم يظهر في شكل آفة مرضية: عرض حالة**  
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في هذا التقرير نعرض دراسة حالة لفتى يبلغ من العمر 13 عاماً عرض على قسم التقويم لعلاج سوء الإطباق. تم إجراء فحص بالأشعة التقليدية للفك العلوي والتي أظهرت وجود ما يشبه الآفة المرضية في الجهة اليمنى من الجزء العظمي لسقف الفم وعليه قمنا بإجراء فحص بالأشعة المقطعية ذات الحزمة المخروطية والتي بدورها أكدت أن ما ظهر و كأنه آفة مرضية ما هي إلا تمدد للجيب الفك الأيمن في سقف الفم. على ضوء هذه الحالة نوصي بضرورة تأقلم إختصاصيي طب الأسنان مع الإختلافات التشريحية الطبيعية للجيب الفك والتي يمكن بعضها أن تظهر في الأشعة التشخيصية في شكل يشبه الآفة المرضية في الفك العلوي.

## CASE REPORT

A 13-year-old boy was presented by his parents to the department of orthodontics for evaluation of malocclusion of maxillary anterior teeth. Patient's past medical history was negative. Initial baseline radiographic examination consisted of panoramic and maxillary occlusal views. The later has incidentally shown a well-demarcated multilocular-appearing radiolucent lesion of the right half of the hard palate, with corticated margin undulating between the roots of right maxillary anterior and premolar teeth (Figure 1). The lesion has seemingly caused resorption, and possibly displacement, of the root of right central incisor. However, intraoral clinical examination was unremarkable for intraoral swelling or abnormal teeth mobility. A provisional diagnostic impression of a benign tumor/cyst-like condition has been suggested, so our differential diagnosis list was narrowed out to keratocystic odontogenic tumor and simple bone cyst. A suggestion of needle aspiration has been delayed in favor of further 3D imaging assessment. Cone beam CT scan was acquired and it surprisingly showed partitioning of the maxillary sinus cavity into the right part of the hard palate forming palatine recess of maxillary sinus (aerated hard palate) (Figure 2). Final diagnosis was recognised and patient's parents were reassured.

## DISCUSSION

The hard (bony) palate constitutes the roof of the oral cavity and the floor of the nasal cavity. It is anatomically formed of the palatine process of maxilla (anterior 2/3) and horizontal plate of palatine bone (posterior 1/3). Paranasal sinuses are named after the bones they are housed in, and it has been reported that a paranasal sinus can extend to pneumatize the entire bone. Therefore, the palatine process of maxilla can be pneumatized by maxillary sinus and this variant is known as palatine recess of maxillary sinus. Earwaker recognizes the palatine recess when it extends to a distance more than the half of the

width of the corresponding nasal floor at the level of the inferior meatus.<sup>1</sup> To best of our knowledge, palatine recess of maxillary sinus has only been sparsely reviewed in English literature. Earwaker has demonstrated the frequency of palatine recess in 11.5% of his patient series.<sup>1</sup> The sinonasal cavity is normally captured (partly or wholly) in most radiographic techniques pertaining to maxillary teeth.



Fig.1. Maxillary occlusal view shows a well-demarcated radiolucency with scalloped corticated margins (arrows).



Fig.2. Coronal cone beam CT image shows extension of right maxillary sinus into palatine process of maxilla (palatine recess of maxillary sinus) (arrows).

On the other hand, the anatomy of the sinonasal complex is highly variable that some anatomists portray it as the fingerprint because it is unique to every individual. Many of the anatomic variants of sinonasal cavity have pertinent clinical implications in terms of predisposing to sinus disease, complicating sinus surgery, or simulating pathology.<sup>2,3</sup> This necessitates dental practitioners to be familiarized with the anatomical variations of the sinonasal cavity. In this case, the palatine recess of maxillary sinus was encountered on conventional radiograph and misdiagnosed for lesion. We recommend the consideration of palatine recess of maxillary sinus in the differential diagnosis of a well-defined radiolucent lesion of the palate particularly when it is asymptomatic. In this case, the deferral of needle biopsy until cone beam CT had been performed was fortunate. Therefore, minimally invasive investigative techniques (e.g., needle aspiration, incisional biopsy) for suspicious radiolucent areas of maxilla should only be performed when a pathologic process is confirmed clinically and/or radiographically. This report supplies a model observation for the utmost usefulness of cone beam CT scan in evaluation of dento-maxillofacial complex at substantially lesser radiation dose.<sup>4</sup>

In conclusion, dental practitioners should be alerted of sinonasal variants frequently popping up on routine radiographs and mimicking pathology.

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